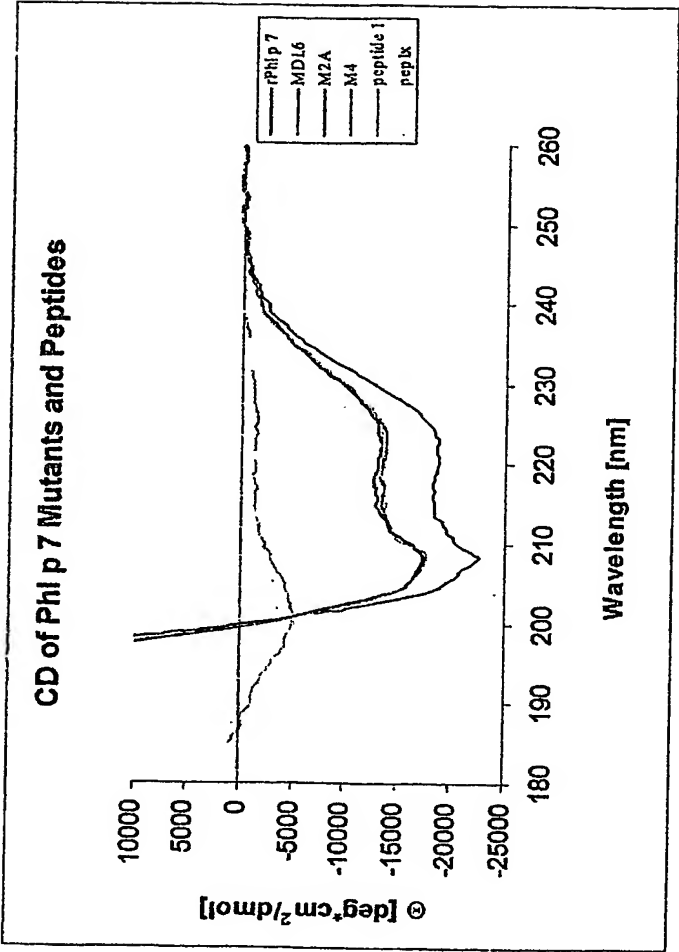
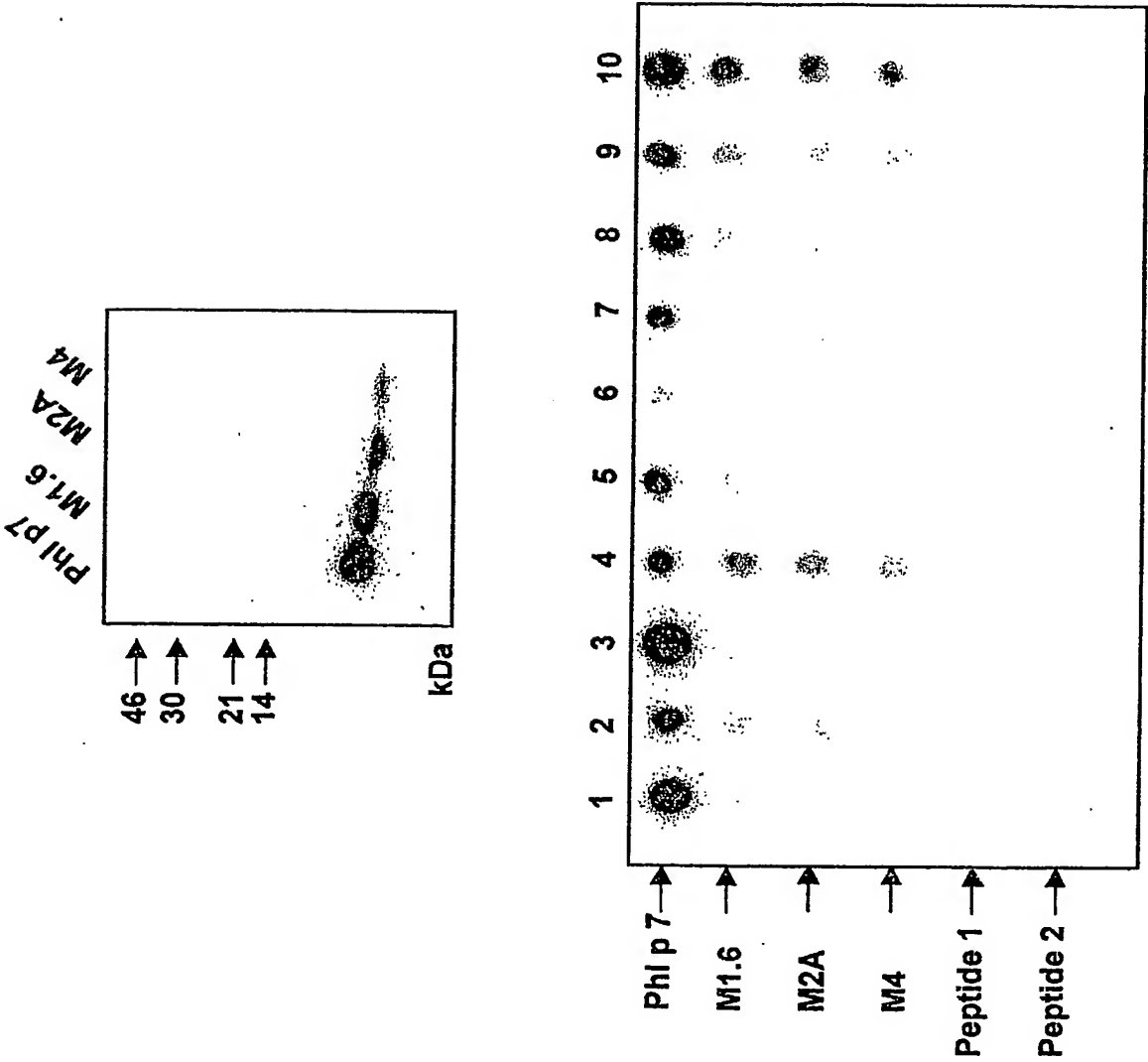


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Figure 1



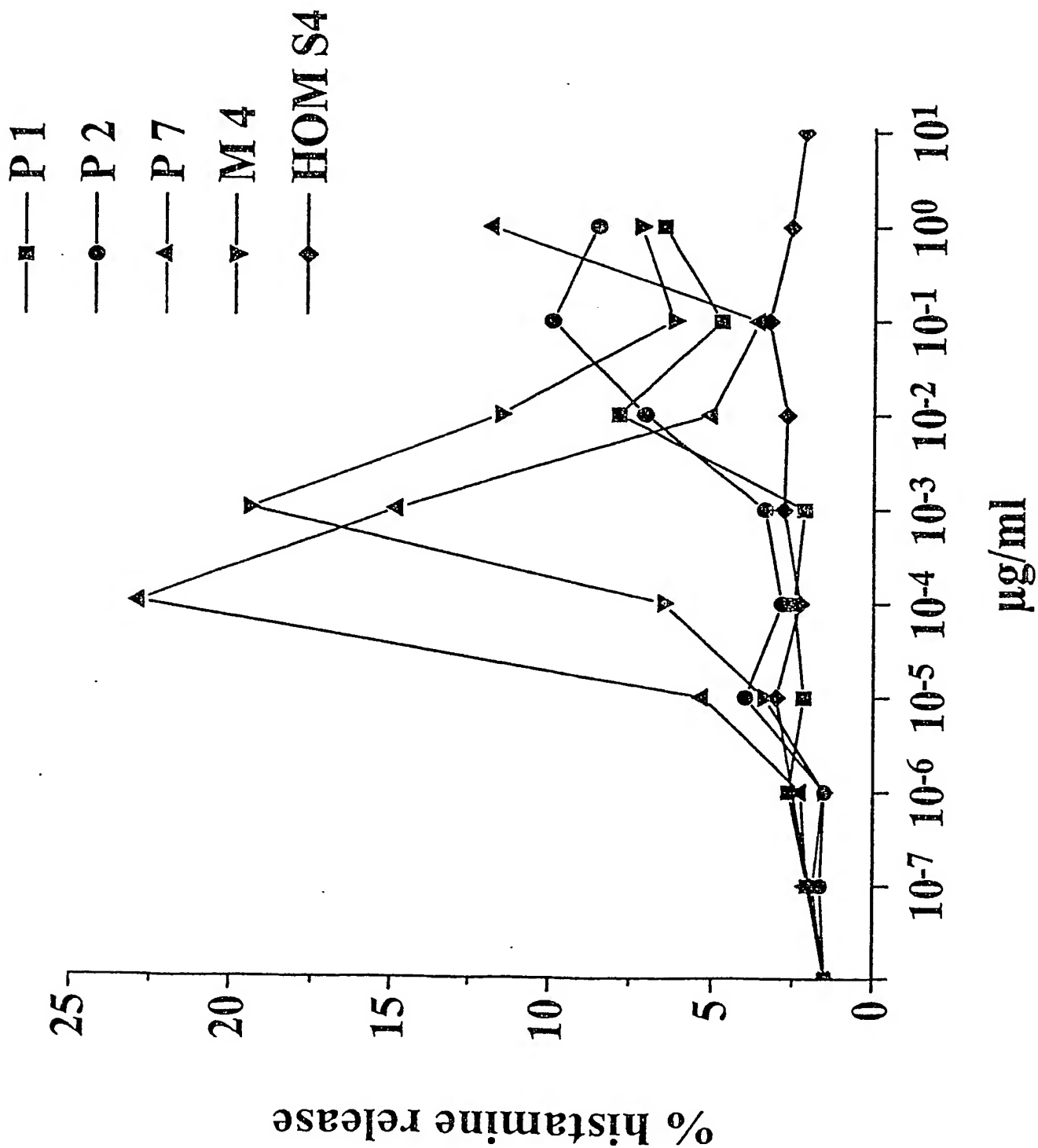
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Figure 2



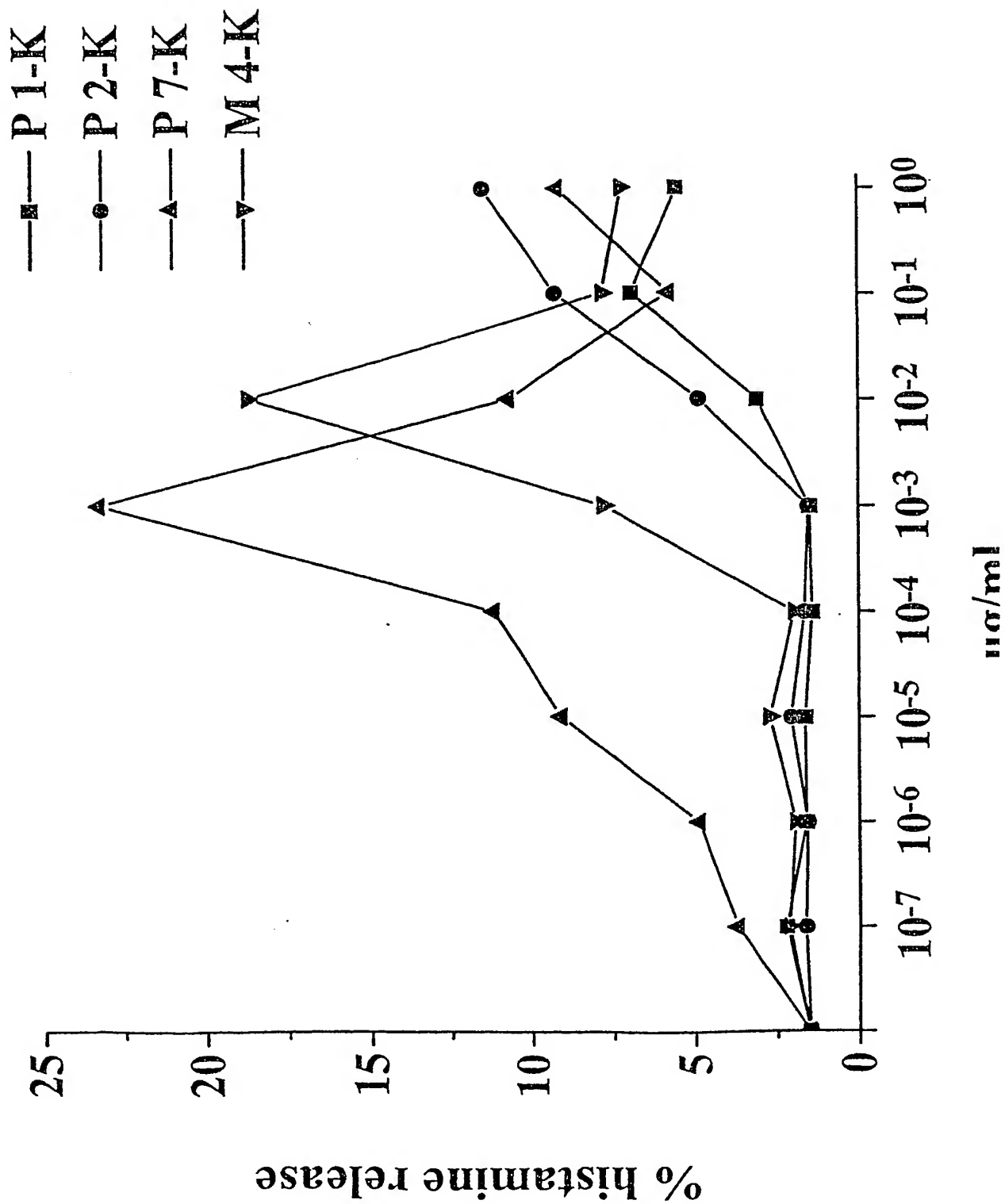
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Figure 3A



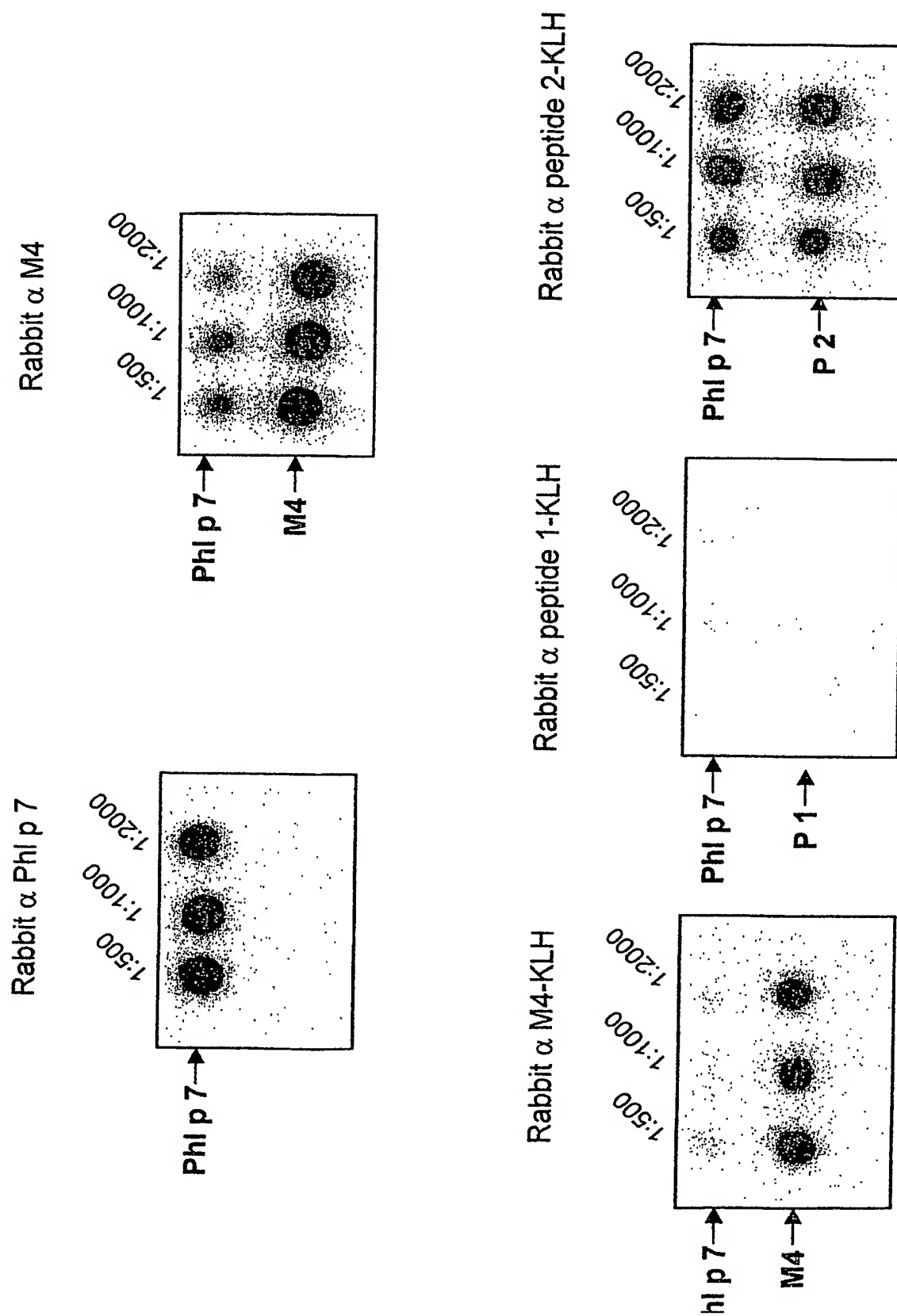
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Figure 3B



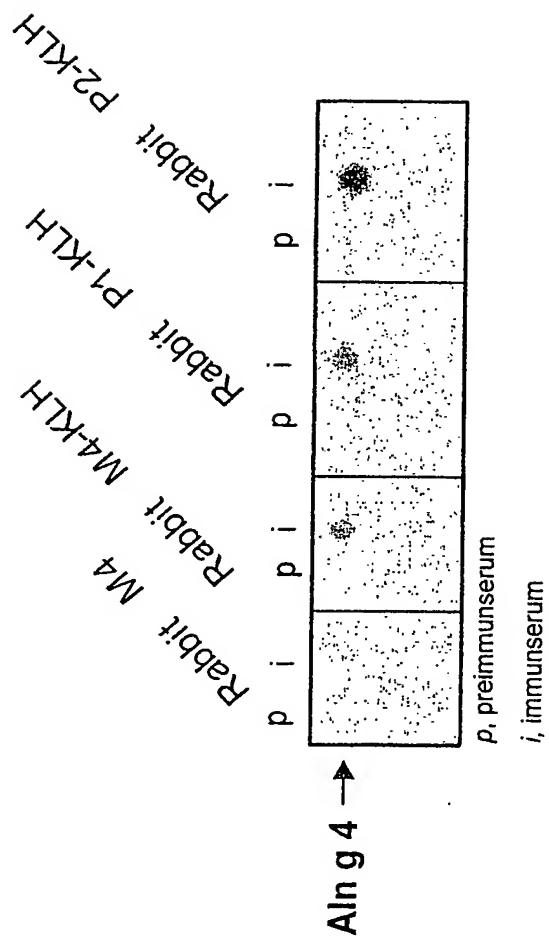
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Figure 4



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Figure 5



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Figure 6 (Table 1)

Characteristics of non-allergenic Phl p 7-derived synthetic peptides and Phl p 7-derived mutants

	Position aa	Sequence	Number of aa	Molecular weight	Isoelectric Point (pI)	Fold (CD)
Peptide 1	2-37	ADDMERIFKRFDINGDGKISLSELTDALRTLGSTSA	36	3932	4.40	-
Peptide 2	36-78	SADDEVQRMMAEIDTDGGDFIDFNEFISFCNANPGLMKDVAKVF	43	4701.9	3.71	-
Mutant 1.6	1-78	MADDMERIFKRFDINGDGKISLSALTDALRTLGSTSADEVQRMMAEIDTDGGDFIDFNAFISFCNANPGLMKDVAKVF	78	8559.9	4.08	+
Mutant 2A	1-78	MADDMERIFKRFDINGAGKISLSALTDALRTLGSTSADEVQRMMAEIDTDGGDFIDFNAFISFCNANPGLMKDVAKVF	78	8515.9	4.17	+
Mutant 4	1-78	MADDMERIFKRFDINGAGKISLSALTDALRTLGSTSADEVQRMMAEIDTDGAGFIDFNAFISFCNANPGLMKDVAKVF	78	8471.9	4.28	+

Figure 7 (Table 2)

Induction of immediate skin reactions with rPhl p 7 and Phl p 7-derived peptides and mutant

		mean wheal diameter									
Individual	rPhl p 7		timothy grass		histamine	P1		P2		M4	
	2µg/ml	8µg/ml	10	11		1µg/ml	4µg/ml	1µg/ml	4µg/ml	2µg/ml	8µg/ml
1	8	11	10		4	0	0	0	0	7	9
2	5	8	10		3	0	0	0	0	4	5
3	6	9	5		4	0	0	0	0	9	7
4	0	0	0		5	0	0	0	0	0	0

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Figure 8 (Table 3)

Rabbit anti-Phl p 7 peptide antisera and a rabbit anti-Phl p 7 mutant antiserum inhibit serum IgE binding of grass pollen allergic patients to rPhl p 7

Patient	% inhibition				
	anti-P1	anti-P2	anti-M4	anti-M4-KLH	anti-rPhl p 7
1	0	64.8	0	35.8	82
2	0	42.26	2.7	18.95	83.7
3	0	42.2	19.9	4	79
4	9.4	39.1	0	35.2	64.1
mean	2.35	47.9	5.6	23.4	77.2

Figure 9

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Phl p 7: 1 MADD-----MERIFKRFD TNGDGKISLSELTDALRTLGSTSADEVQRMMAEIDTDGDG 53
MADD ERIFK FD NGDGKIS SEL DAL TLGS DEV MMAEIDTDGDG
Aln g 4: 1 MADDHPQDQAEHERIFKCFDANGDGKISASELGDALKTLGSVTPDEVKHMMAEIDTDGDG 60

Phl p 7: 54 FIDFNEFISFCNANPGLMKDVAKVF 78
FI F EF F AN GL KDVAK F
Aln g 4: 61 FISFQEF TNFARANRGLVKDVAKIF 85